

**Oroville Facilities Relicensing Efforts  
Draft Narrative Reports for Resource Action Discussion**

**Resource Action: EWG – 103**

**Task Force Recommendation Category: 1**

**TRANSFER OF BASS FROM THE AFTERBAY BROOD PONDS TO THE  
AFTERBAY**

**Date of Field Evaluation:** None was conducted for this write-up.

**Evaluation Team:** Eric See with assistance from Mike Manwaring and Troy Baker

**Description of Potential Resource Action:**

This Resource Action would be designed to stock the Thermalito Afterbay with black bass that are removed from the brood ponds to protect waterfowl young from predation. This measure has been proposed as an alternative to draining the ponds during the waterfowl brooding season to remove the predatory black bass. The fish could be removed from the ponds by seining, electrofishing, or other appropriate methods annually (or as needed) and placed in the Thermalito Afterbay to prevent the warm water species (i.e. bass) from adversely impacting brooding waterfowl (i.e. ducks) and amphibious species. This Resource Action would allow for an increase in the warm water fishery, while also reducing predation on waterfowl and amphibious species.

The following resource actions are either similar to or directly related to the proposed measure:

- EWG-56, that could be designed to construct and maintain additional brood ponds in the Thermalito Afterbay to accommodate nesting waterfowl.
- EWG-68A, which is designed to recharge the brood ponds at 3-week intervals during the brooding periods,
- EWG-26, that is aimed at improving warm water fish habitat in the Thermalito Afterbay.
- EWG-28, manage water levels in the Thermalito Afterbay aimed at protecting nesting and rearing warm water species (i.e. bass).

**Nexus to Project:**

- Water level fluctuations in the Thermalito Afterbay hinder the establishment of rooted aquatic vegetation, which reduces cover for game fish and may lead to reduced year-class strength.
- Water level fluctuations in the Thermalito Afterbay may adversely impact warm water game fish nesting and juvenile rearing.

**Potential Environmental Benefits:**

- The primary intended benefit is increasing the production of warm water game fish in the Thermalito Afterbay.
- There are also additional benefits which could be realized through positive public relations and enhanced recreational opportunities.

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**Potential Constraints:**

Potential constraints associated with this Resource Action could include:

- Effectiveness of the equipment used in capture and relocation of the fish considering the typical shallow nature of these waters.
- Depending on the timing of this Resource Action, there may be disturbance impacts on nesting and rearing waterfowl and other wildlife.
- Design considerations would also need to address the potential for impacts on ESA species.

**Existing Conditions in the Proposed Resource Action Implementation Area:**

The Department of Water Resources, California Department of Fish and Game (DFG), California Waterfowl Association, and other stakeholders have worked cooperatively over the last 15 years to increase waterfowl production on the Afterbay. One cooperative program to address the reduced cover associated with Afterbay operations involved construction of six waterfowl brood ponds. These ponds were constructed by creating a small levee or dam across an inlet of the Afterbay. These impoundments maintain a relatively stable water surface elevation which allows the establishment of emergent vegetation as well as submerged aquatic habitat. Further, these impoundments create conditions where the open water and terrestrial cover habitats are immediately adjacent. While these ponds have served to increase the warm water fishery in the Afterbay, they are believed to have had negative impacts on waterfowl production because of predation on ducklings.

These ponds also provide ideal spawning and rearing conditions for several warm water game fish species, particularly largemouth bass. These fish have the potential to adversely impact waterfowl through predation. Historic actions to mitigate for this have included draining the ponds, which has resulted in significant mortality of these desirable game fish, and resulted in negative public relations within the community. If this practice were to continued, there could also negative impacts to sensitive species (ESA species of concern). This Resource Action would provide an alternative to draining the ponds as the means to reduce bass predation on waterfowl, and would also enhance the Afterbay sport fishery.

**Design Considerations and Evaluation:**

This Resource Action would not require any engineering design to achieve its goal of increasing the warm water fishery and reducing the predation on waterfowl. The methodology for the measure could include:

- Boat electrofishing
- Back-pack electrofishing
- Seines
- Fish traps
- All of these could be used in combination with one another

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It is uncertain if permitting would be required, because there could be concerns with potential impacts to sensitive species (ESA species of concern) [DFG]. In addition, a scientific collection permit would be required.

This Resource Action could be conducted in conjunction with DWR waterfowl nest counts, to reduce overall disturbance of waterfowl nesting. The measure could be conducted on an as needed basis, but would likely be needed annually or biannually.

The results of the Resource Action could be measured by using fish inventories and population trends (including fish numbers, species, and sizes of fish, and how they vary over time).

#### **Synergism and Conflicts:**

Synergisms could be created if this measure is planned in conjunction with other Resource Actions designed to enhance the Afterbay fishery. This includes EWG-26, EWG-28, EWG-56, EWG-68A, plus additional Resource Actions being proposed by the Recreational Work Group.

Potential conflicts would include a proposed design component of EWG-56, which deals with draining the brood ponds to remove predatory fish (i.e., bass). However, if designed correctly, this Resource Action could be an opportunity to reduce impacts on nesting waterfowl in the brood ponds while enhancing the Afterbay fishery.

#### **Uncertainties:**

Although this Resource Action would not require any complex engineering design, there would be a few uncertainties associated with implementing this measure. These would include:

- Effectiveness of the equipment used in capture and relocation of the fish considering the typical shallow nature of these waters.
- Lack on knowledge on the predation rate, and number of fish that utilize the ponds.
- Determining the appropriate schedule for this measure to be most effective (annual, biannual, or even semiannual).
- Design considerations would also need to address the potential for impacts on ESA species.

#### **Cost Estimate:**

An initial cost estimate for this Resource Action includes costs for equipment and manpower. The anticipated costs would likely be on the order of less than \$1,500 per pond, per year, assuming no large-scale equipment purchases would be needed (i.e., electrofishing boats).

#### **Recommendations:**

This measure should be considered as a potentially viable solution for protecting waterfowl from bass predation in the brood ponds, which has been identified as a negative impact by DFG. In addition, this would enhance the Afterbay sport fishery at a

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relatively low cost, and may also provide positive public relations for DWR within the community.

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